Department of Bacteriology
Chiba University School of Medicine
Chiba, Japan.

Dr. Jushua Lederberg.
Department of Genetics,
College of Agriculture,
University of Wisconsin,
Madison, Wisconsin.

2. June, 1952.

Dear Dr. Lederberg:

While comparing the biological characters of several Proteus strains, we found that one of them does not decompose urea. This urease-negative O X K strain was subsequently changed to urease-positive by passing it on agar media containing 2 per cent ureas through 2 to 19 generations. These variant strains are stable in their urease activity even passing through plain urea -free agar media. There were no urease differences of sugar fermenting abilities or antigenicity between these urease-negative and urease-positive mutants. The data so far obtained suggest that spontaneously appeared urease-positive mutants multiplied so that there occurred population exchange from urease-negative to urease-positive bacteria. We can not still clarify what mechanism stimulates these population exchanges. Attempts to change urease-positive bactria to urease-negative one were still unsuccessful.

When I consulted Dr. F. J. Ryan to obtain the reprint of his paper on the population equilibrium in mutating cultures of bacteria, he suggested to read your paper on Microbial Genetics. I suppose, "Microbial Genetics" is the monograph on the subject indicated by the title. I would appreciate your information on this monograph and the method how to get it. I would also greatly appreciate reprints of the following papers, if available.

Problems in microbial genetics.
Heredity 2: 145, 1948.

Gene combination and linked segregations
in Escherichia coli. Genetics 32: 505, 1947.

Sincerely yours

Tsuguo Kuwata

Tsuguo Kuwata, M.D.